

What is claimed is:

1. A system for transmitting a modulated RF carrier audio signal from a base unit to a receiver unit, the base unit having a pair of audio input connections of which are coupled to an audio source amplification device for receiving left and right audio signals, the receiver unit having a pair of electroacoustic transducers for reproducing demodulated left and right audio signals modulated upon the RF carrier audio signal; the system comprising:
  - a) a transmitting circuit located within the base unit and having a first antenna and first, second and third circuits, the pair of audio input connections of the base coupled to the first circuit, the first circuit comprising an audio signal processing circuit, the second circuit comprising a micro control unit and control circuitry and the third circuit comprising a power supply circuit and charge circuit;
  - b) the audio signal processing circuit of the transmitter first circuit modulating the left and right audio signals received from the audio source amplification device for delivery upon an RF carrier audio signal in the 900MHz range;
  - c) the micro control unit of the transmitter second circuit sending a control signal to the transmitter first circuit for choosing the RF carrier audio signal to be transmitted;

- d) the power supply circuit and charge circuit of the transmitter third circuit supplying all necessary DC voltage to the transmitter;
- e) the first antenna transmitting the modulated RF carrier audio signal in the 900MHz range to the receiver; and
- f) a receiver circuit located within the receiver unit and coupled to the pair of electroacoustic transducers enclosed therewithin, the receiver circuit comprising a second antenna coupled to an input network, a UHF module, a filtering network, a control unit and an audio amplifier, and
- g) the UHF module of the receiver circuit downconverting the modulated RF carrier audio signal to an audio signal which is reproducible by the receiver unit electroacoustic transducers through audio amplification.

2. The system of Claim 1, wherein the audio processing circuit of the transmitting circuit first circuit comprises an auto level control amplifier circuit coupled to the pair of audio input connections, left and right audio frequency filtering and pre-emphasis circuits coupled to the auto level control amplifier circuit, a stereo multiplexer IC coupled to the left and right audio frequency filtering and pre-emphasis circuits, a UHF module coupled to the stereo multiplexer IC, and the first antenna coupled to the UHF module.

3. The system of Claim 1, wherein the micro control unit and control circuitry of the transmitting circuit second circuit comprises a CPU coupled to the audio processing circuit UHF module and first and second auto power circuits coupled to the CPU.
4. The system of Claim 3, wherein the CPU comprises a micro control unit for sending a control signal to a phase lock loop circuit within the transmitting circuit UHF module.
5. The system of Claim 1, wherein the power supply circuit and charge circuit of the transmitting circuit third circuit comprises of a 12V DC adapter coupled to an AC power course and a voltage regulator coupled to the 12V DC adapter for supplying a constant VC voltage to the transmitting circuit.
6. The system of Claim 2, wherein the stereo multiplexer IC of the transmitting circuit first circuit outputs a stereo multiplexed audio modulated signal having left and right audio signals and a pilot tone signal.
7. The system of Claim 6, wherein the pilot tone signal is 19KHz.
8. The system of Claim 2, wherein the UHF module of the transmitting circuit first circuit outputs a 912.5MHz RF carrier audio signal.
9. The system of Claim 2, wherein the first antenna transmits the modulated RF carrier audio signal.

10. The system of Claim 1, wherein the auto level control amplifier circuit of the transmitting circuit first circuit is a monolithic integrated circuit having a dual equalizer amplifier.
11. The system of Claim 1, wherein the transmitting circuit first circuit UHF module comprises a voltage controlled oscillator, a phase lock loop circuit and a radio frequency amplifier.
12. The system of Claim 1, wherein the modulated RF audio carrier signal is downconverted once from the transmitted 900MHz range to a reproducible 10.7MHz.
13. The system of Claim 1, wherein the first antenna is a one-quarter wavelength transmitting antenna.
14. A system for transmitting a modulated RF carrier audio signal from a base unit to a receiver unit, the base unit including a pair of audio input connections coupled to a transmitting circuit having an antenna, the pair of audio input connections receiving left and right audio signals from an audio source amplification device, the system comprising:
  - a) a receiver circuit enclosed within the receiver unit coupled to a pair of electroacoustic transducers for receiving the modulated RF carrier audio signal and downconverting said signal once to a second signal reproducible by the electroacoustic transducers; and

b) the receiver circuit having an antenna for receiving the modulated RF carrier audio signal, a single downconverter and a control circuit.

15. The system of Claim 14, wherein the single downconverter comprises:

- a) a frequency mixer;
- b) a local oscillator; and
- c) a phase lock loop circuit.

16. The system of Claim 14, wherein the modulated RF carrier audio signal is in the range of 900MHz and the second signal reproducible by the electroacoustic transducers is 10.7MHz.

17. The system of Claim 15, wherein the local oscillator, controlled by the phase lock loop circuit, produces a desired tunable frequency signal which is subsequently directed to the downconverter frequency mixer.

18. The system of Claim 17, wherein the desired tunable frequency signal is locked in reaction to the phase lock loop circuit receiving a feedback signal from the local oscillator and creating an error voltage.

19. The System of Claim 15, wherein the receiver circuit control circuit produces a stable frequency signal which is used by the phase lock loop circuit as a reference frequency signal for the downconverter local oscillator.

20. The system of Claim 19, wherein the reference frequency signal is adjustable by the receiver circuit control circuit to a desired tunable frequency signal, the desired tunable frequency signal enabling the local oscillator frequency signal to be matched with the modulated RF carrier audio signal in the downconverter mixer to produce the second signal reproducible by the electroacoustic transducers.